Hydro Politics Newsletter
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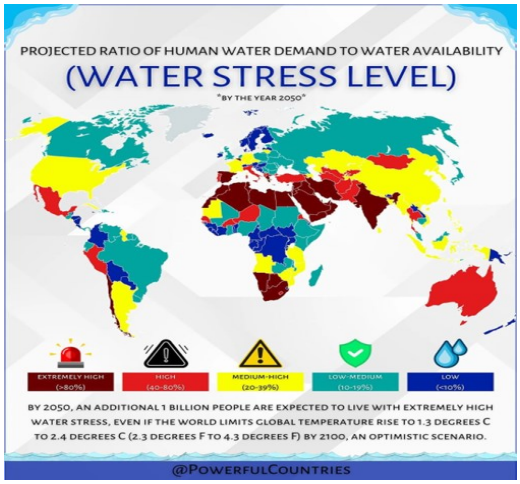
Water demand is rising fast

Citizens, business and policy-makers must come together to address fast-rising water use.

Across the world, demand for water is exceeding what's available. Globally, demand has more than doubled since 1960. Increased water demand is often the result of growing populations and industries like irrigated agriculture, livestock, energy production and manufacturing. Meanwhile, lack of investment in water infrastructure, unsustainable water use policies or increased variability due to climate change can all affect the available water supply.

The global water crisis threatens the well-being of billions of people and the stability of nations worldwide. Key drivers include unsustainable usage, climate change, pollution, lack of infrastructure, poverty, weak governance, and transboundary disputes. The multiple impacts span public health, food and energy security, economic growth, and geopolitical conflicts.

Water shortages hamper economic growth and worsen poverty. Hydroelectricity, manufacturing, mining, and other water-intensive industries suffer. The World Bank estimates that by 2050, water scarcity could cost some regions 6% of gross domestic product (GDP), entrenching inequality. Climate migration strains nations. Overall, water crises destabilize societies on many levels if left unaddressed.



Tackling the global water crisis requires both local and international initiatives across infrastructure, technology, governance, cooperation, education, and funding.

There is no silver bullet, but solutions are there for the taking; there is much we, as individuals, organizations and society, can achieve collectively. We can drive progress toward a sustainable future, where the supply of fresh water meets growing demand. We have the tools at our disposal to start to address water insecurity – now let's gather the will to do so.

Dursun Yıldız

Director

Water Crises Threaten World Peace (Report)

The United Nations World Water Development Report 2024, published by UNESCO on behalf of UN-Water, highlights that tensions over water are exacerbating conflicts worldwide. To preserve peace, States must boost international cooperation and transboundary agreements.

Click here to view the full report

As water stress increases, so do the risks of local or regional conflict. UNESCO's message is clear: if we want to preserve peace, we must act swiftly not only to safeguard water resources but also to enhance regional and global cooperation in this area.

Water, when managed sustainably and equitably, can be a source of peace and prosperity. It

is also the literal lifeblood of agriculture, the major socio-economic driver for billions of people.

According to the new report published by UNESCO, on behalf of UN-Water, today 2.2 billion people still live without access to safely managed drinking water and 3.5 billion lack access to safely managed sanitation. The UN goal of ensuring this access for all by 2030 is therefore far from being attained, and there is reason to fear that these inequalities may continue to rise.

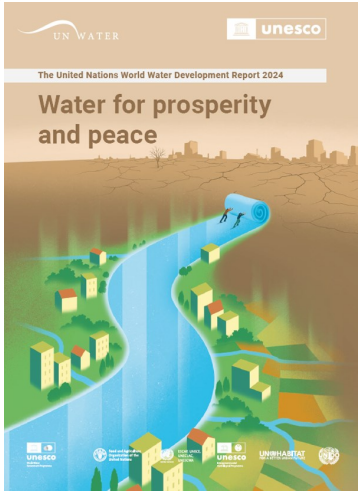
Between 2002 and 2021 droughts affected more than 1.4 billion people. As of 2022, roughly half of the world's population experienced severe water scarcity for at least part of the year, while one quarter faced 'extremely high' levels of water stress, using over 80% of their annual renewable freshwater supply. Climate change is projected to increase the frequency and severity of these phenomena, with acute risks for social stability.The lack of water security has also been identified as one of the drivers of migration. A study conducted in Somalia indicates a 200% increase in gender-based violence against a group of displaced people.

An urgent need for transboundary agreements

This water scarcity can increase the risk of conflict. In the Sahel region, wetland degradation – often due to ill-advised water development projects – has exacerbated local disputes over access to water and productive land, causing tensions.

While approximately 40% of the world's population lives in transboundary river and lake basins, only a fifth of countries have cross border agreements to jointly manage these shared resources equitably. Many transboundary basins are already located in areas marked by current or past interstate tensions. In the Arab region, seven countries were in conflict in 2021 – some dating back many years –which has had wide-ranging implications for water supply, infrastructure, and potential cooperation on water-related issues.

Africa remains especially vulnerable to interstate tensions relating to water: 19 out of 22 states studied suffer from water scarcity, and two-thirds of the continent's freshwater resources are transboundary. Of the 106 transboundary aquifers mapped in Africa, interstate cooperation has only been formalized in seven.



Source: The United Nations World Water Development Report 2024 Water for prosperity and peace

COP 29 Declaration Reinforces Linkages Between Water and Climate Change

The Declaration on Water for Climate Action recognizes the critical role the water-energy-food-ecosystems nexus plays in climate change mitigation and adaptation.

It acknowledges water's multisectoral and cross-cutting nature, and that climate objectives and the SDGs will remain out of reach unless water security is addressed.

It aims to promote dialogue and partnerships, strengthen the generation of scientific evidence, and enhance water-related climate policy actions.

As of 10 December 2024, 57 national governments and 25 stakeholders from international organizations, financial institutions, philanthropies, the private sector, academia, and civil society organizations (CSOs) endorsed a declaration seeking to strengthen the water dimension within the global climate ambition. The COP 29 Declaration on Water for Climate Action launches the Baku Dialogue on Water for Climate Action to serve as a COP-to-COP collaboration platform fostering continuity and coherence on water-related climate action.

The Declaration on Water for Climate Action is the initiative of the Azerbaijani Presidency of the 2024 UN Climate Change Conference (UNFCCC COP 29), which aims to:

- Promote dialogue and partnerships among countries at international, regional, river, and basin levels;
- Strengthen the generation of scientific evidence on the causes and impacts of climate change on water resources, water basins, and water-related ecosystems; and
- Enhance water-related climate policy actions.

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The Declaration notes that 2.2 billion people lack access to safe drinking water, approximately half the world's population is experiencing severe water scarcity, and 3.5 billion people do not have access to safely managed sanitation. It underscores the need for concerted efforts, strengthened actions, and dialogue and partnerships at the international, regional, national, river, and basin levels, to address these challenges.

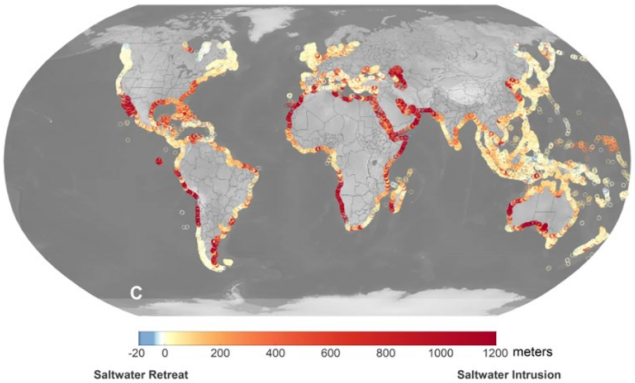
NASA-DOD Study: Saltwater To Widely Taint Coastal Groundwater By 2100

Intrusion of saltwater into coastal groundwater can make water there unusable, damage ecosystems, and corrode infrastructure.

Seawater will infiltrate underground freshwater supplies in about three of every four coastal areas around the world by the year 2100, according to a recent study led by researchers at NASA's Jet Propulsion Laboratory in Southern California. In addition to making water in some coastal aquifers undrinkable and unusable for irrigation, these changes can harm ecosystems and corrode infrastructure.

Called saltwater intrusion, the phenomenon happens below coastlines, where two masses of water naturally hold each other at bay. Rainfall on land replenishes, or recharges, fresh water in coastal aquifers (underground rock and soil that hold water), which tends to flow below ground toward the ocean. Meanwhile, seawater, backed by the pressure of the ocean, tends to push inland. Although there's some mixing in the transition zone where the two meet, the balance of opposing forces typically keeps the water fresh on one side and salty on the other.

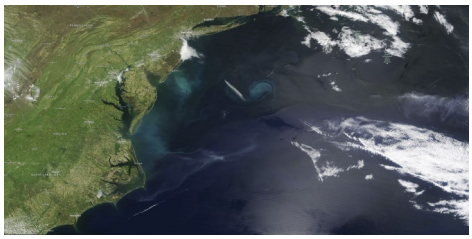
Now, two impacts of climate change are tipping the scales in favor of salt water. Spurred by planetary warming, sea level rise is causing coastlines to migrate inland and increasing the force pushing salt water landward. At the same time, slower groundwater recharge — due to less rainfall and warmer weather patterns — is weakening the force moving the underground fresh water in some areas.



Worldwide Intrusion

The study, published in Geophysical Research Letters in November, evaluated more than 60,000 coastal watersheds (land area that channels and drains all the rainfall and snowmelt from a region into a common outlet) around the world, mapping how diminished groundwater recharge and sea level rise will each contribute to saltwater intrusion while estimating what their net effect will be.

Considering the two factors separately, the study's authors found that by 2100 rising sea levels alone will tend to drive saltwater inland in 82% of coastal watersheds studied. The transition zone in those places would move a relatively modest distance: no more than 656 feet (200 meters) from current positions. Vulnerable areas include low-lying regions such as Southeast Asia, the coast around the Gulf of Mexico, and much of the United States' Eastern Seaboard.



All told, due to the combined effects of changes in sea level and groundwater recharge, saltwater intrusion will occur by century's end in 77% of the coastal watersheds evaluated, according to the study.

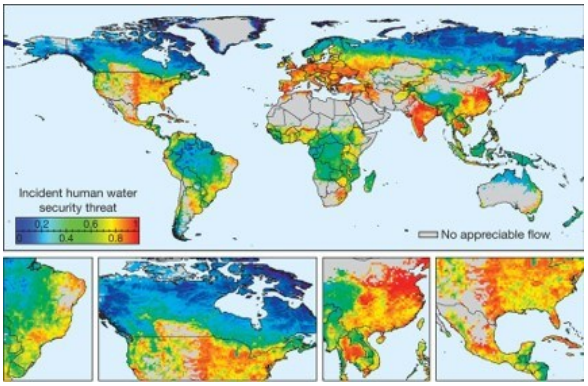
Generally, lower rates of groundwater recharge are going to drive how far saltwater intrudes inland, while sea level rise will determine how widespread it is around the world. "Depending on where you are and which one dominates, your management implications might change," said Kyra Adams, a groundwater scientist at JPL and the paper's lead author.

For example, if low recharge is the main reason intrusion is happening in one area, officials there might address it by protecting groundwater resources, she said. On the other hand, if the greater concern is that sea level rise will oversaturate an aquifer, officials might divert groundwater.

Source: The National Aeronautics and Space Administration

What is water security ?

Various definitions of water security have evolved over the past two decades , from one that is mainly people-centred, to one that highlights both its productive/destructive potential and the role of ecosystems. The term water insecurity, on the other hand, has been generally linked to water stress and more simply defined as the lack of safe, reliable, sufficient and affordable water for a prosperous life (Stoler et al., 2022).



None of these definitions directly associate water security with national security, with the possible exception of the one proposed by UN-Water (2013), which adds "in a climate of peace and political stability" as a contextual element. The concept of 'water security' is first and foremost one of social security (ensuring communities' and individuals' Access to water). In reality, however, water – and, by abstraction, water security – can be a highly geopolitical issue and, indeed, a determining factor in the prosperity and peaceful existence of communities, countries and regions.

Water security: Previous definitions

"… every person has access to enough safe water at affordable cost(s) to lead a clean, healthy and productive life, while ensuring that the environment is protected and enhanced." (GWP, 2000, p. 12).

"… the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems, and production, coupled with an acceptable level of water-related risks to people, environments and economies." (Grey and Sadoff, 2007, p. 545).

"… the capacity of a population to safeguard access to adequate quantities of water of an acceptable quality for sustaining human and ecosystem health on a watershed basis, and to ensure efficient protection of life and property against water-related hazards [such as] floods, landslides, land subsidence, and droughts."

(UNESCO, 2012, p. 7).

"… the capacity of a population to safeguard sustainable access to adequate quantities of and acceptable quality water for sustaining livelihoods, human well-being, and socioeconomic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability."

(UN-Water, 2013, p. 1).

Source: The United Nations World Water Development Report 2024 Water for prosperity

New Syria will bring a new water equation for the Euphrates River

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Where people live in harmony with nature

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